

AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** A multimodal polymer composition comprising at least one polymer (A) having a weight average molecular weight (M_w) of less than 60000 g/mol; at least one polyolefin (B) having a higher weight average molecular weight (M_w) than the polymer (A); and a filler (C), wherein the polymer composition without the filler ~~(C)~~ has a density of 940 kg/m³ or lower; and the at least one polymer (A) is a wax having a weight average molecular weight (M_w) of less than 10000 g/mol.
2. **(Cancelled)**
3. **(Cancelled)**
4. **(Currently amended)** A polymer composition according to claim 1 wherein the at least one polymer (A) is
~~(1) a polyolefin (1) having a weight average molecular weight (M_w) of 10000 to less than 60000 g/mol, or~~
~~(2) a wax (2) having weight average molecular weight (M_w) of less than 10000 g/mol, and wherein~~
the wax is selected from one or more of
~~(2a) (1) a polypropylene wax having weight average molecular weight (M_w) of less than 10000 g/mol or a polyethylene wax having weight average molecular weight (M_w) of less than 10000 g/mol, or~~
~~(2b) (2) an alkyl ketene dimer wax having weight average molecular weight (M_w) of less than 10000 g/mol.~~
5. **(Currently amended)** A polymer composition according to claim 1 wherein the composition further comprises
~~(1) a polyolefin (1) having a weight average molecular weight (M_w) of 10000 to less than 60000 g/mol as a first polymer (A) and~~

~~(2) a wax having weight average molecular weight (M_w) of less than 10000 g/mol as a second polymer (A).~~

6. (Previously presented) A polymer composition according to claim 1 wherein the polymer (A) has a density of lower than 945 kg/m³.
7. (Previously presented) A polymer composition according to claim 1 wherein the multimodal polymer composition is at least a bimodal polymer composition.
8. (Previously presented) A polymer composition according to claim 1 wherein the polyolefin (B) has a weight average molecular weight (M_w) of higher than 80000 g/mol.
9. (Previously presented) A polymer composition according to claim 1 wherein the polyolefin (B) is a polyethylene.
10. (Previously presented) A polymer composition according to claim 1 wherein the polyolefin (B) is a low density polyethylene (LDPE), a linear low density polyethylene (LLDPE) or a linear medium density polyethylene (LMDPE).
11. (**Currently amended**) A polymer composition according to claim 1 wherein the total polymer composition comprises 1 to 50 wt% of the polymer (A), 40 to 90 wt% of the polyolefin (B) and 1 to 50 wt% of the filler (C).
12. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition without the filler (C) has melt flow rate MFR₂, according to ISO 1133, at 190 °C, of 5 to 20 g/10 min.
13. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition without the filler (C) has melt flow rate MFR₅, according to ISO 1133, at 190 °C, of 20 to 40 g/10 min.
14. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition without the filler (C) has melt flow ratio MFR₅/MFR₂ of 2.5 to 4.5.

15. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition without the filler (C) has a ratio of the weight average molecular weight (M_w) to the number average molecular weight (M_n) of from 8 to 25.
16. (Previously presented) A polymer composition according to claim 1 wherein 95 wt% of the filler (C) has a particle size of less than 10 μm .
17. (Previously presented) A polymer composition according to claim 1 wherein the filler (C) is talc.
18. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition further comprises antioxidants(s) and/or process stabilizers in an amount of less than 2000 ppm in the total composition.
19. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition is a linear low density polyethylene (LLDPE) or a linear medium density polyethylene (LMDPE), and wherein the polymer (A) and polyolefin (B) are produced in a multi-stage polymerization process.
20. (Currently amended) A polymer composition according to claim + 19 wherein ~~the polymer composition is a linear low density polyethylene (LLDPE) or a linear medium density polyethylene (LMDPE), wherein the polymer (A) and the polyolefin (B) are produced in a multi-stage polymerization process, and wherein~~ the amount of comonomer units in the linear low density polyethylene (LLDPE) or the linear medium density polyethylene (LMDPE) is 0.1 to 1.0 mol %.
21. (Currently amended) A polymer composition according to claim + 19 wherein ~~the polymer composition is a linear low density polyethylene (LLDPE) or a linear medium density polyethylene (LMDPE), wherein the polymer (A) and the polyolefin (B) are produced in a multi-stage polymerization process, wherein each of the polymer (A) and the polyolefin (B) is a linear low density polyethylene (LLDPE) or a linear medium density polyethylene (LMDPE), and wherein~~ the comonomer units are selected from the group consisting of C_3 α -olefin, C_4 α -

olefin, C₅ α -olefin, C₆ α -olefin, C₇ α -olefin, C₈ α -olefin, C₉ α -olefin, C₁₀ α -olefin, C₁₁ α -olefin, C₁₂ α -olefin, C₁₃ α -olefin, C₁₄ α -olefin, C₁₅ α -olefin, C₁₆ α -olefin, C₁₇ α -olefin, C₁₈ α -olefin, C₁₉ α -olefin and C₂₀ α -olefin.

22. **(Currently amended)** A polymer composition according to claim 1 wherein the ~~polymer (A) is a wax selected from one or more of~~
~~(1) a polypropylene wax having weight average molecular weight (M_w) of less than 10000 g/mol or~~
~~(2) a polyethylene wax having weight average molecular weight (M_w) of less than 10000 g/mol, or~~
~~(3) an alkyl ketene dimer wax having weight average molecular weight (M_w) of less than 10000 g/mol, and wherein the polyolefin (B) is a linear low density polyethylene (LLDPE) or low density polyethylene (LDPE).~~
23. **(Currently amended)** A polymer composition according to claim 1 wherein the ~~polymer (A) is a wax selected from one or more of~~
~~(1) a polypropylene wax having weight average molecular weight (M_w) of less than 10000 g/mol or~~
~~(2) a polyethylene wax having weight average molecular weight (M_w) of less than 10000 g/mol, or~~
~~(3) an alkyl ketene dimer wax having weight average molecular weight (M_w) of less than 10000 g/mol, and~~
~~the polyolefin (B) is a linear low density polyethylene (LLDPE) or low density polyethylene (LDPE), and wherein the polymer composition further comprises a polyolefin (1) as a second polymer (A), wherein the polyolefin (1) is a linear low density polyethylene (LLDPE).~~
24. **(Cancelled)**
25. **(Cancelled)**
26. (Previously presented) A multi-layer material comprising
a substrate as a first layer (I)

a multimodal polymer composition according to claim 1 as at least a second layer (II).

27. (Previously presented) A multi-layer material according to claim 26 wherein the substrate is selected from the group consisting of paper, paperboard, aluminium film and plastic film.

28. (Previously presented) A multi-layer material according to claim 26 wherein the multi-layer material further comprises a third layer (III), which comprises a low density polyethylene (LDPE).

29. (**Currently amended**) A multi-layer material according to claim ~~26~~ ~~28~~ wherein the low density polyethylene (LDPE) layer (III) has a melt flow rate MFR₂, according to ISO 1133, at 190°C, of at least 5 g/10 min.

30. (Previously presented) A film comprising a multimodal polymer composition according to claim 1.

31. (Previously presented) A process for producing the composition according to claim 1 comprising the steps of
(1) producing the polymer (A) and the polyolefin (B) in a multi-stage process comprising a loop reactor and a gas phase reactor, wherein the polymer (A) is generated in at least one loop reactor and the polyolefin (B) is generated in a gas phase reactor; and
(2) blending and compounding the filler (C) and the composition comprising the polymer (A) and the polyolefin (B).

32. (**Currently amended**) A process for producing the composition according to claim 31 comprising the steps of
(1) producing the composition comprising the polymer (A) and the polyolefin (B) using a catalyst, wherein the catalyst is a high activity procatalyst comprising a particulate inorganic support, and a chlorine compound deposited on the support,

(2) contacting the inorganic support with an alkyl metal chloride which is soluble in non-polar hydrocarbon solvents, and has the formula $R_nMeCl_{3-n}m$ $R_nMeCl_{3-n}m$ wherein R is a C₁-C₂₀ alkyl group, Me is a metal of group III(13) of the periodic table, n=1 or 2 and m=1 or 2, to give a first reaction product,

(3) contacting the first reaction product with a compound containing hydrocarbyl and hydrocarbyl oxide linked to magnesium which is soluble in non-polar hydrocarbon solvents, to give a second reaction product, and

(4) contacting the second reaction product ~~is contacted~~ with a titanium compound which contains chlorine, having the formula $Cl_xTi(OR^{IV})_{4-x}$ wherein R^{IV} is a C₂-C₂₀ hydrocarbyl group and x is 3 or 4, to give the procatalyst, and wherein the titanium compound which contains chlorine may be the same or different than the chlorine compound used in step 1.

33. **(Currently amended)** A process for producing a multi-layer material according to claim 26 wherein the multimodal polymer composition ~~comprises~~ ~~at least one polymer (A) having a weight average molecular weight (M_w) of less than 60000 g/mol;~~ ~~at least one polyolefin (B) having a higher weight average molecular weight (M_w) than polymer (A); and~~ ~~a filler (C);~~ ~~and wherein the polymer composition without filler (C) has a density of 940 kg/m³ or lower~~ is applied on the substrate by a film coating line comprising an unwind, a wind, a chill roll and a coating die.

34. **(Currently amended)** A method for extrusion coating comprising applying to a material to be coated the multimodal polymer composition according claim 1.

35. (Previously presented) The method according to claim 34 wherein the material to be coated is a multi-layer material comprising
a substrate as a first layer (I)
the multimodal polymer composition as at least a second layer (II).

36. (Previously presented) A method comprising preparing a film from the multimodal polymer composition according to claim 1.
37. (Cancelled)
38. (Previously presented) The method of claim 36, wherein the film is a cast film.
39. (Cancelled).
40. (Cancelled)
41. (Cancelled)
42. (Cancelled)
43. (Cancelled)
44. (New) The polymer composition according to claim 1, wherein the wax is selected from one or more of (1) a polypropylene wax having weight average molecular weight (M_w) of less than 10000 g/mol or a polyethylene wax having weight average molecular weight (M_w) of less than 10000 g/mol, or (2) an alkyl ketene dimer wax having weight average molecular weight (M_w) of less than 10000 g/mol, and wherein the composition further comprises a polyolefin having a weight average molecular weight (M_w) of 10000 to less than 60000 g/mol as a second polymer (A).
45. (New) The polymer composition according to claim 1, wherein the wax is selected from one or more of (1) a polypropylene wax having weight average molecular weight (M_w) of less than 10000 g/mol or a polyethylene wax having weight average molecular weight (M_w) of less than 10000 g/mol, or (2) an alkyl ketene dimer wax having weight average molecular weight (M_w) of less than 10000 g/mol, wherein the composition further comprises a polyolefin having a weight average molecular weight (M_w) of 10000 to less than 60000 g/mol as a second polymer (A), and wherein polyolefin (B) is a low density polyethylene

(LDPE), a linear low density polyethylene (LLDPE) or a linear medium density polyethylene (LMDPE).

46. (New) The polymer composition according to claim 1, wherein the wax is selected from one or more of (1) a polypropylene wax having weight average molecular weight (M_w) of less than 10000 g/mol or a polyethylene wax having weight average molecular weight (M_w) of less than 10000 g/mol, or (2) an alkyl ketene dimer wax having weight average molecular weight (M_w) of less than 10000 g/mol, and wherein the comonomer units are selected from the group consisting of C_3 α -olefin, C_4 α -olefin, C_5 α -olefin, C_6 α -olefin, C_7 α -olefin, C_8 α -olefin, C_9 α -olefin, C_{10} α -olefin, C_{11} α -olefin, C_{12} α -olefin, C_{13} α -olefin, C_{14} α -olefin, C_{15} α -olefin, C_{16} α -olefin, C_{17} α -olefin, C_{18} α -olefin, C_{19} α -olefin and C_{20} α -olefin.
47. (New) The polymer composition according to claim 1, wherein the composition is a linear low density polyethylene (LLDPE) or a linear medium density polyethylene (LMDPE), wherein the polymer (A) and polyolefin (B) are produced in a multi-stage polymerization process, and wherein the comonomer units are selected from the group consisting of C_3 α -olefin, C_4 α -olefin, C_5 α -olefin, C_6 α -olefin, C_7 α -olefin, C_8 α -olefin, C_9 α -olefin, C_{10} α -olefin, C_{11} α -olefin, C_{12} α -olefin, C_{13} α -olefin, C_{14} α -olefin, C_{15} α -olefin, C_{16} α -olefin, C_{17} α -olefin, C_{18} α -olefin, C_{19} α -olefin and C_{20} α -olefin.
48. (New) The polymer composition according to claim 1, wherein the wax is selected from one or more of (1) a polypropylene wax having weight average molecular weight (M_w) of less than 10000 g/mol or a polyethylene wax having weight average molecular weight (M_w) of less than 10000 g/mol, or (2) an alkyl ketene dimer wax having weight average molecular weight (M_w) of less than 10000 g/mol, wherein the composition further comprises a polyolefin having a weight average molecular weight (M_w) of 10000 to less than 60000 g/mol as a second polymer (A), wherein polyolefin (B) is a low density polyethylene (LDPE), a linear low density polyethylene (LLDPE) or a linear medium density

polyethylene (LMDPE), and wherein the comonomer units are selected from the group consisting of C₃ α -olefin, C₄ α -olefin, C₅ α -olefin, C₆ α -olefin, C₇ α -olefin, C₈ α -olefin, C₉ α -olefin, C₁₀ α -olefin, C₁₁ α -olefin, C₁₂ α -olefin, C₁₃ α -olefin, C₁₄ α -olefin, C₁₅ α -olefin, C₁₆ α -olefin, C₁₇ α -olefin, C₁₈ α -olefin, C₁₉ α -olefin and C₂₀ α -olefin.

49. (New) The polymer composition according to claim 1, wherein the wax is selected from one or more of (1) a polypropylene wax having weight average molecular weight (M_w) of less than 10000 g/mol or a polyethylene wax having weight average molecular weight (M_w) of less than 10000 g/mol, or (2) an alkyl ketene dimer wax having weight average molecular weight (M_w) of less than 10000 g/mol, wherein the composition further comprises a polyolefin having a weight average molecular weight (M_w) of 10000 to less than 60000 g/mol as a second polymer (A), wherein polyolefin (B) is a low density polyethylene (LDPE), a linear low density polyethylene (LLDPE) or a linear medium density polyethylene (LMDPE), wherein the comonomer units are selected from the group consisting of C₃ α -olefin, C₄ α -olefin, C₅ α -olefin, C₆ α -olefin, C₇ α -olefin, C₈ α -olefin, C₉ α -olefin, C₁₀ α -olefin, C₁₁ α -olefin, C₁₂ α -olefin, C₁₃ α -olefin, C₁₄ α -olefin, C₁₅ α -olefin, C₁₆ α -olefin, C₁₇ α -olefin, C₁₈ α -olefin, C₁₉ α -olefin and C₂₀ α -olefin, and wherein the amount of comonomer units in the linear low density polyethylene (LLDPE) or the linear medium density polyethylene (LMDPE) is 0.1 to 1.0 mol %.
50. (New) The multi-layer material of claim 26, wherein the substrate is selected from the group consisting of paper, paperboard, aluminium film and plastic film, and wherein the multi-layer material further comprises a third layer (III) which comprises a low density polyethylene (LDPE).
51. (New) A film comprising a multimodal polymer composition according to claim 44.

52. (New) A film comprising a multimodal polymer composition according to claim 46.
53. (New) A film comprising a multimodal polymer composition according to claim 49.